Fig.1

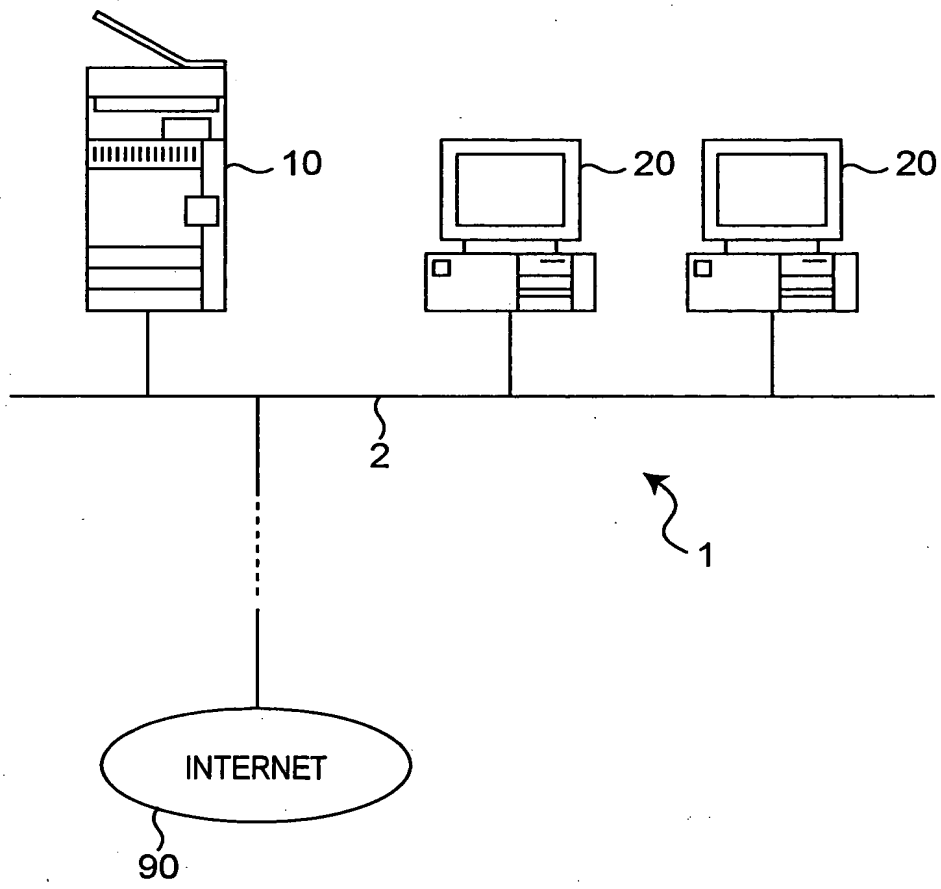


Fig.2

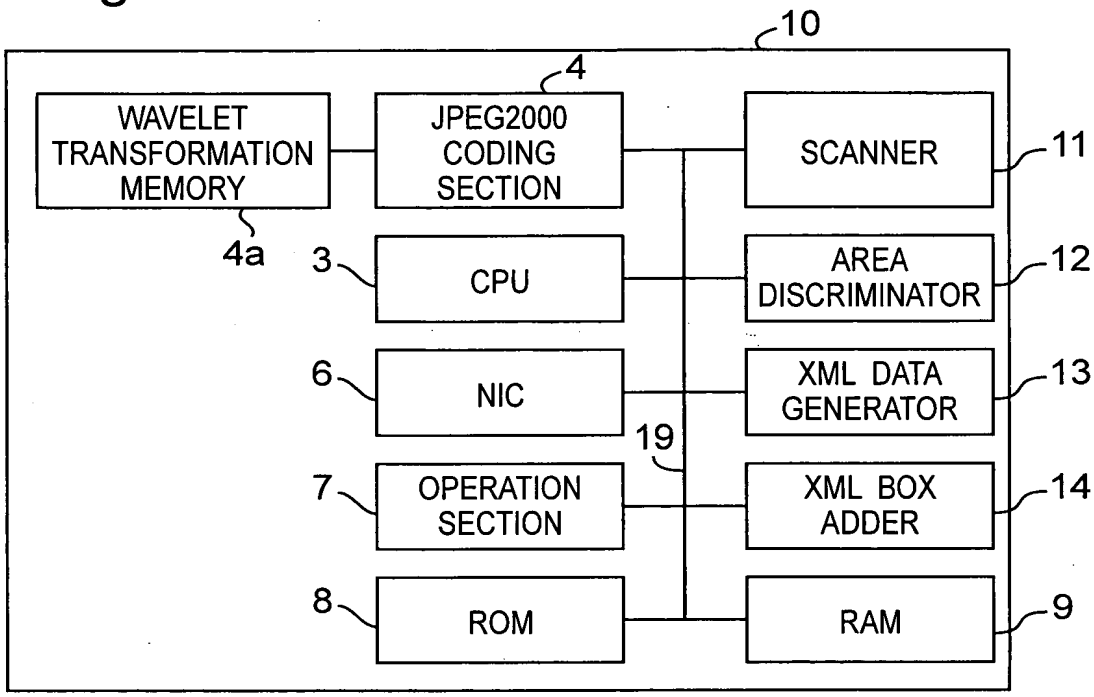

10
4
WAVELET TRANSFORMATION MEMORY
JPEG2000 CODING SECTION
SCANNER
11
4a
3
CPU
AREA DISCRIMINATOR
12
6
NIC
XML DATA GENERATOR
13
19
7
OPERATION SECTION
XML BOX ADDER
14
8
ROM
RAM
9

Fig.3

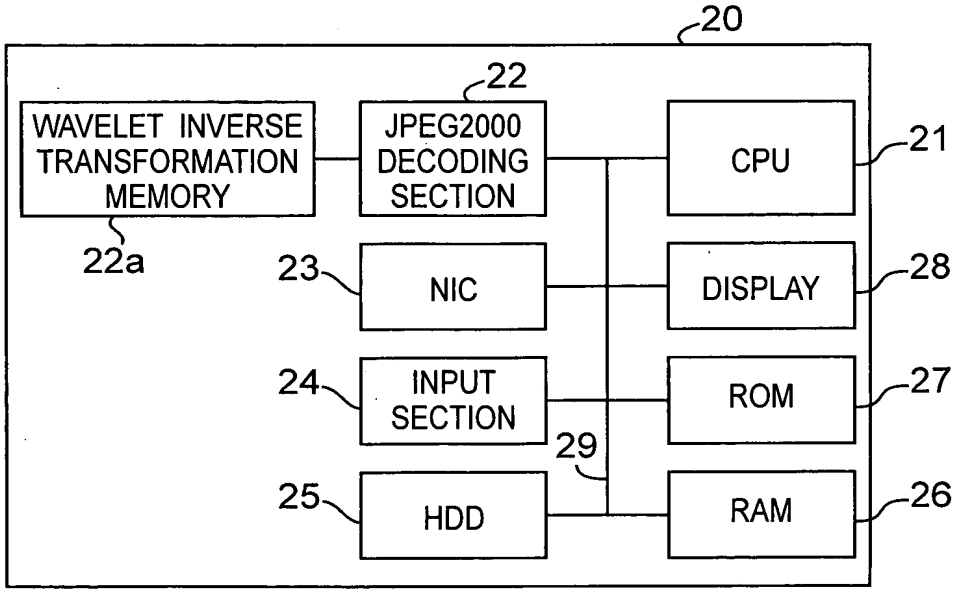

20
22
WAVELET INVERSE TRANSFORMATION MEMORY
JPEG2000 DECODING SECTION
CPU
21
22a
23
NIC
DISPLAY
28
24
INPUT SECTION
ROM
27
29
25
HDD
RAM
26

Fig.4

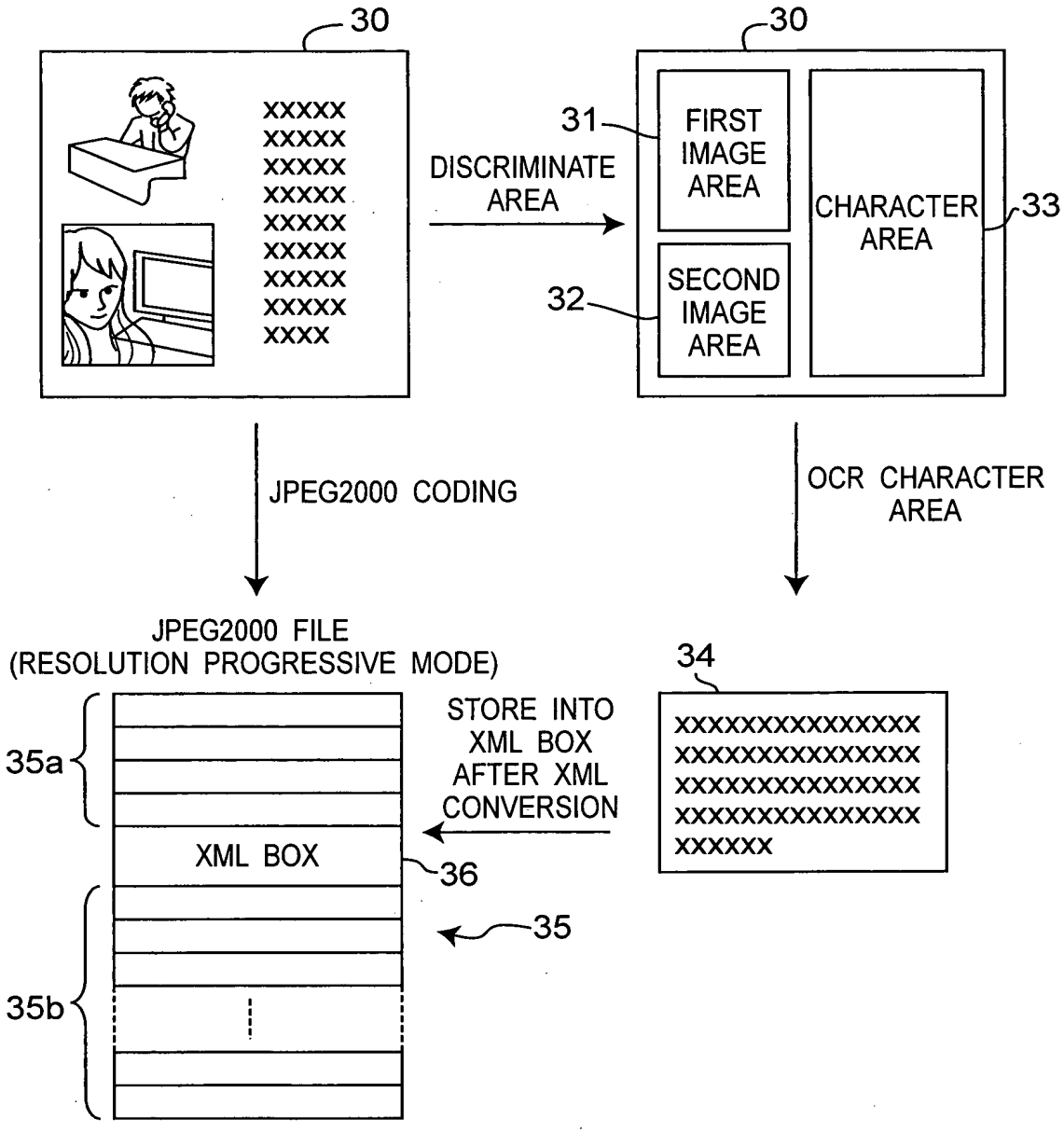
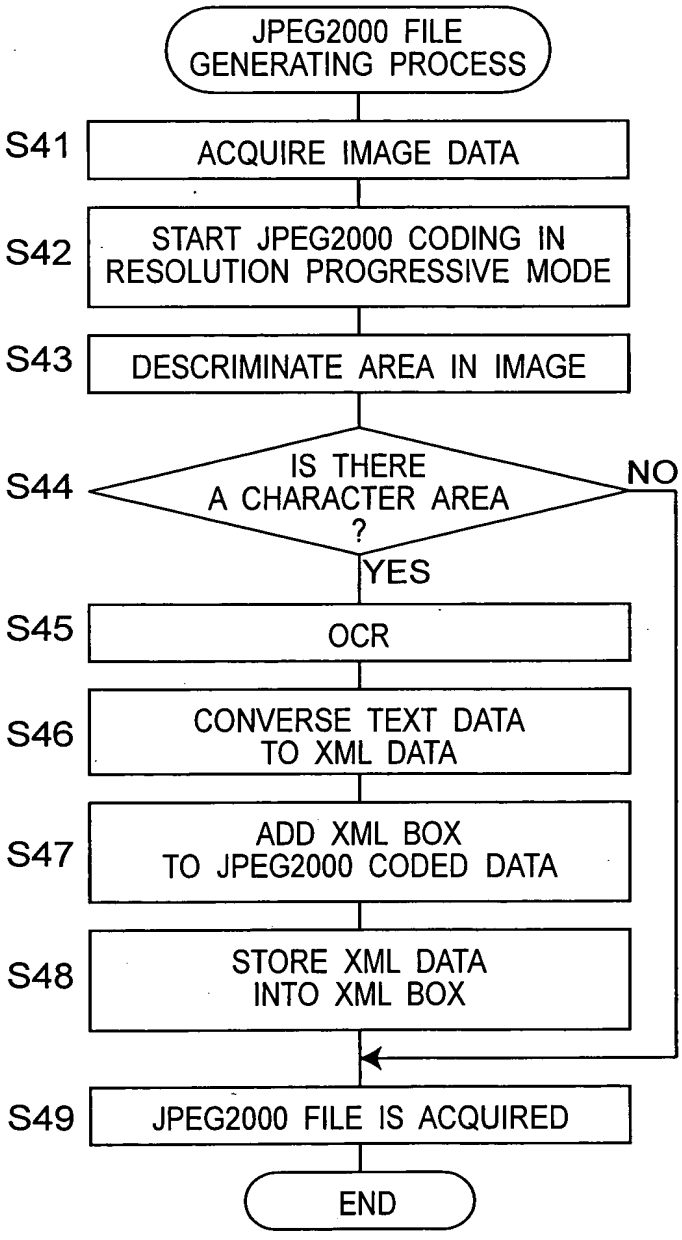

30
xxxxx
xxxxx
xxxxx
xxxxx
xxxxx
xxxxx
xxxxx
xxxxx
xxxx
DISCRIMINATE AREA
30
31
FIRST IMAGE AREA
SECOND IMAGE AREA
32
CHARACTER AREA
33
JPEG2000 CODING
OCR CHARACTER AREA
JPEG2000 FILE
(RESOLUTION PROGRESSIVE MODE)
35a
XML BOX
36
35
35b
STORE INTO XML BOX AFTER XML CONVERSION
34
xxxxxxxxxxxxxxx
xxxxxxxxxxxxxxx
xxxxxxxxxxxxxxx
xxxxxxxxxxxxxxx
xxxxxx

Fig.5


JPEG2000 FILE GENERATING PROCESS
S41
ACQUIRE IMAGE DATA
S42
START JPEG2000 CODING IN RESOLUTION PROGRESSIVE MODE
S43
DESCRIMINATE AREA IN IMAGE
S44
IS THERE A CHARACTER AREA ?
NO
YES
S45
OCR
S46
CONVERSE TEXT DATA TO XML DATA
S47
ADD XML BOX TO JPEG2000 CODED DATA
S48
STORE XML DATA INTO XML BOX
S49
JPEG2000 FILE IS ACQUIRED
END

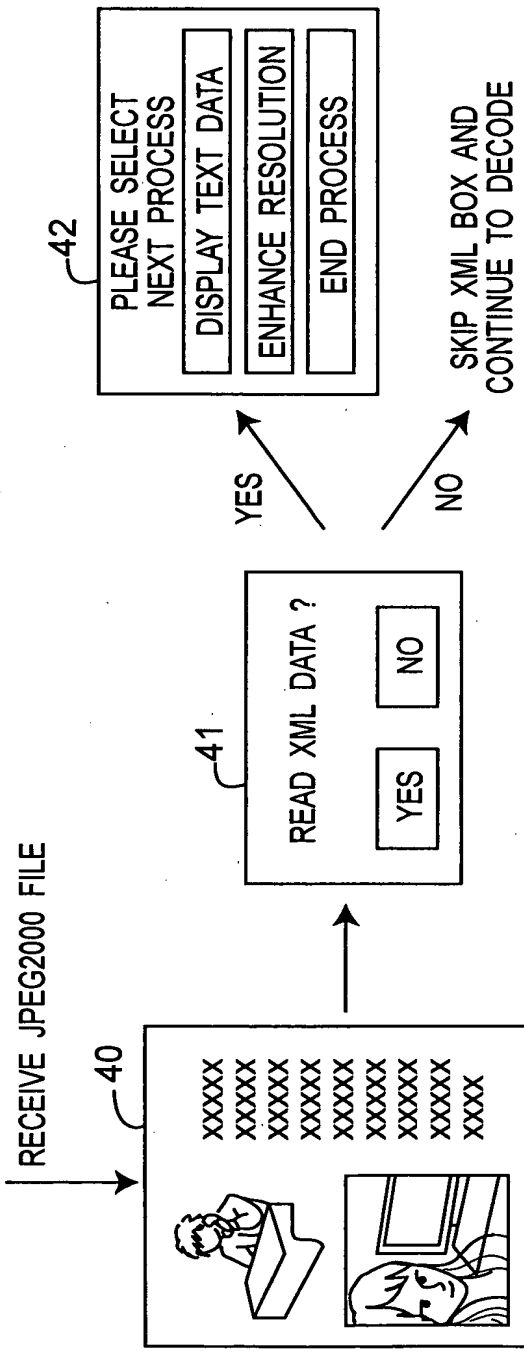

RECEIVE JPEG2000 FILE
40
XXXX
XXXX
XXXX
XXXX
XXXX
XXXX
XXXX
XXX
41
READ XML DATA ?
YES
NO
YES
NO
42
PLEASE SELECT NEXT PROCESS
DISPLAY TEXT DATA
ENHANCE RESOLUTION
END PROCESS
SKIP XML BOX AND CONTINUE TO DECODE

Fig.6

Fig.7

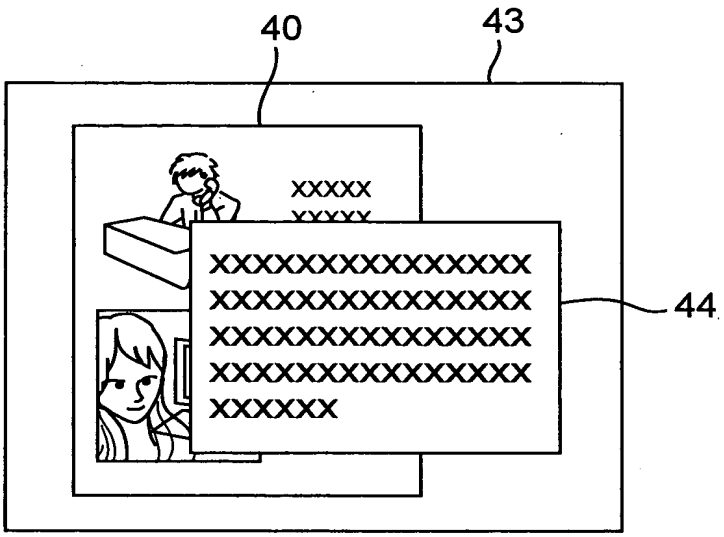

40
43
XXXXX
XXXXX
XXXXXXXXXXXXXXX
XXXXXXXXXXXXXXX
XXXXXXXXXXXXXXX
XXXXXXXXXXXXXXX
XXXXXX
44

Fig.8

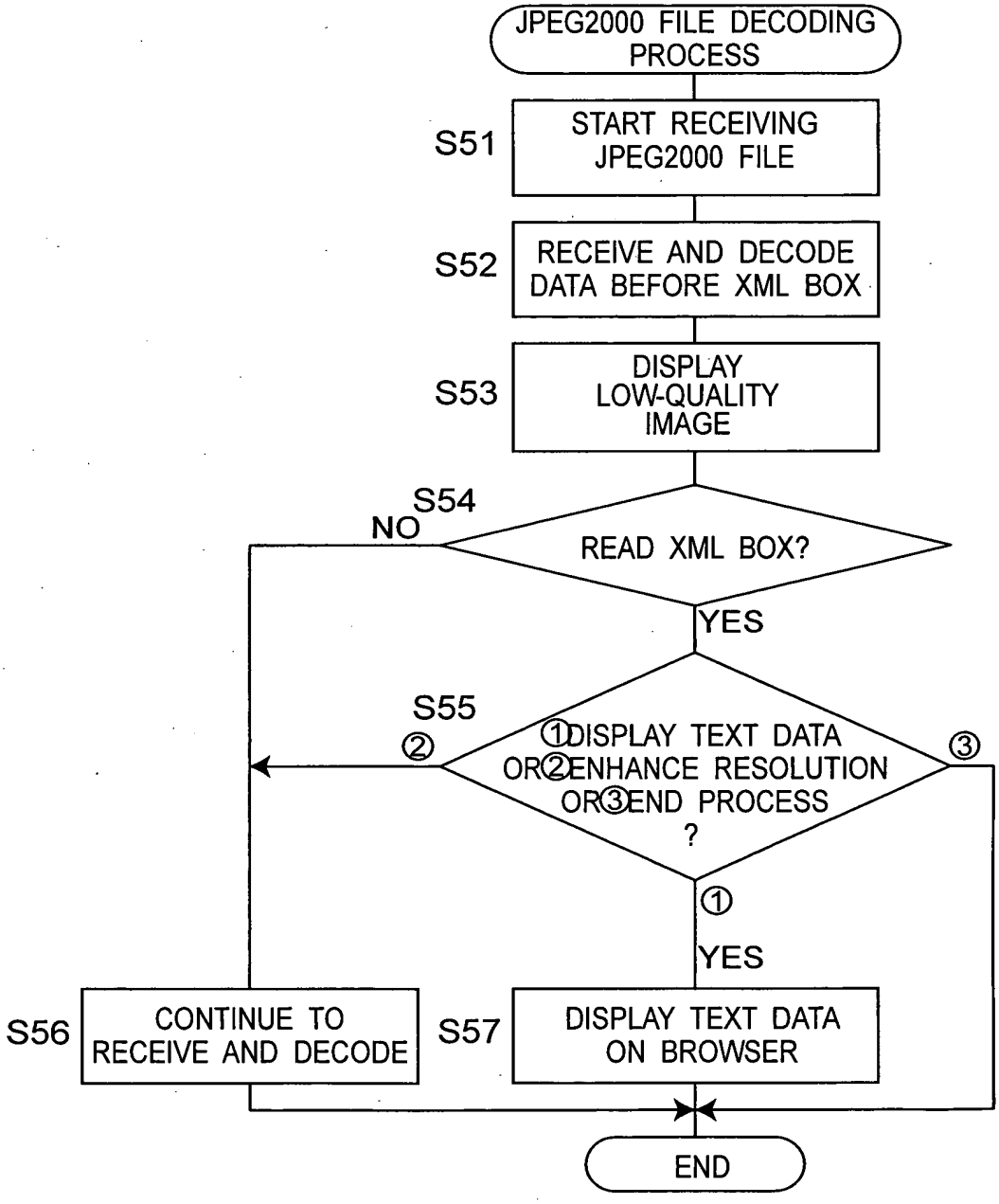
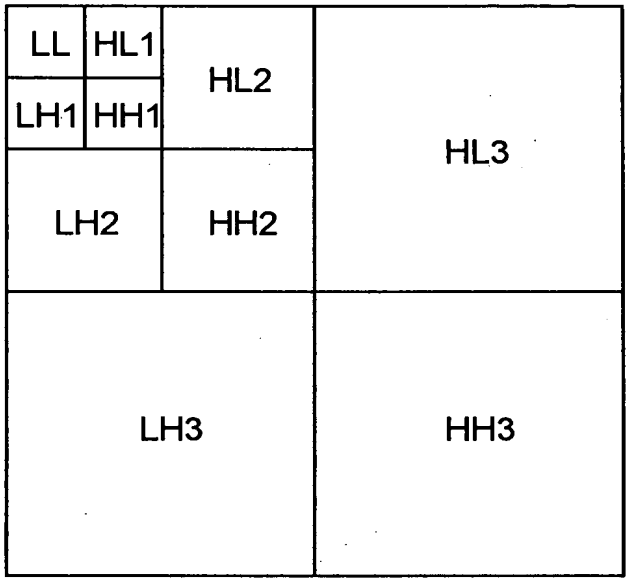

JPEG2000 FILE DECODING PROCESS
S51
START RECEIVING JPEG2000 FILE
S52
RECEIVE AND DECODE DATA BEFORE XML BOX
S53
DISPLAY LOW-QUALITY IMAGE
S54
NO
READ XML BOX?
YES
S55
②
①DISPLAY TEXT DATA OR②ENHANCE RESOLUTION OR③END PROCESS ?
③
①
YES
S56
CONTINUE TO RECEIVE AND DECODE
S57
DISPLAY TEXT DATA ON BROWSER
END

Fig.9



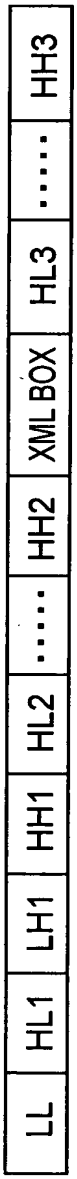


Fig.10

Fig.11

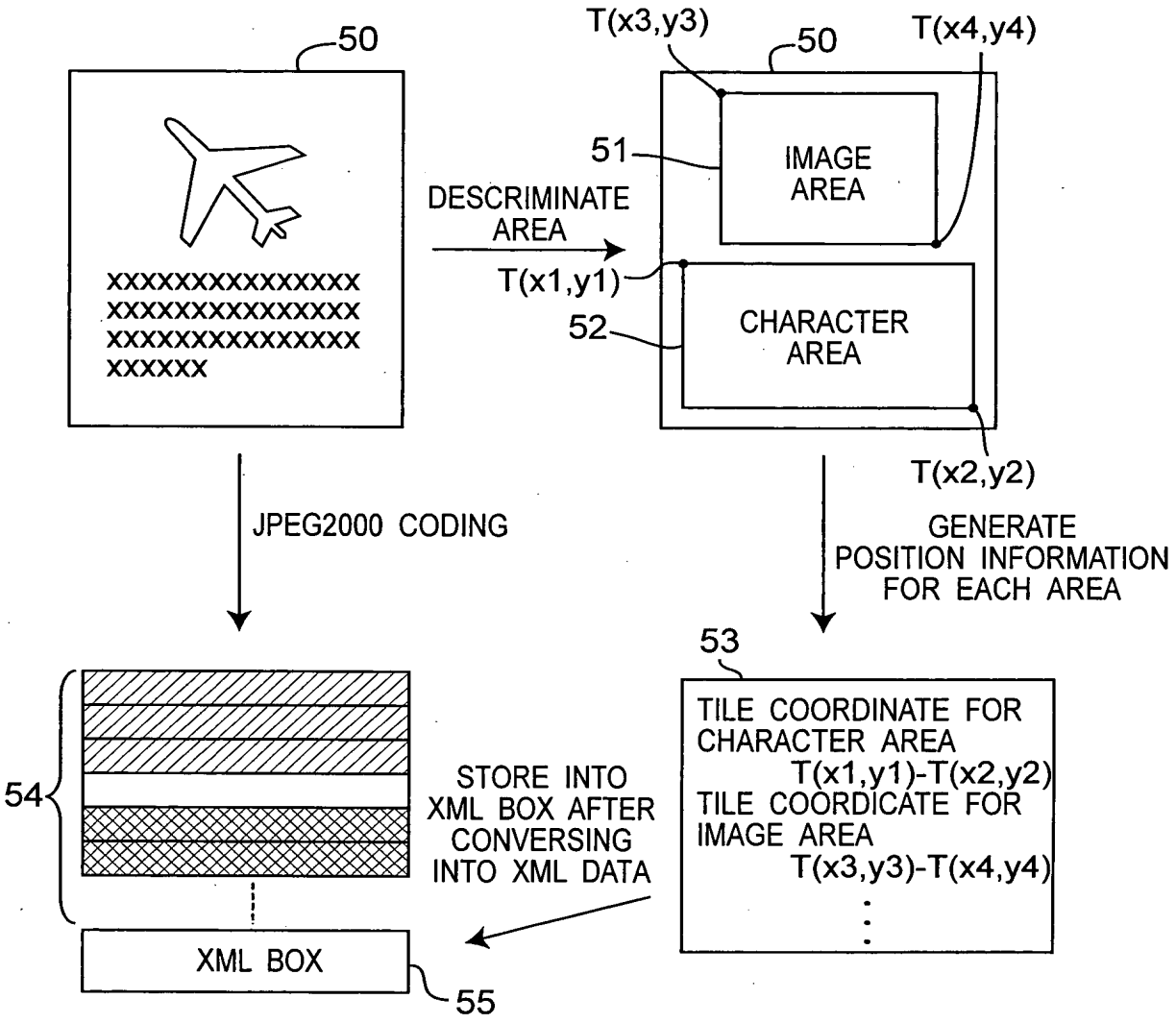

50
xxxxxxxxxxxxxxx
xxxxxxxxxxxxxxx
xxxxxxxxxxxxxxx
xxxxxx
DESCRIMINATE AREA
T(x3,y3)
50
T(x4,y4)
51
IMAGE AREA
T(x1,y1)
52
CHARACTER AREA
T(x2,y2)
JPEG2000 CODING
GENERATE POSITION INFORMATION FOR EACH AREA
53
TILE COORDINATE FOR CHARACTER AREA
T(x1,y1)-T(x2,y2)
TILE COORDICATE FOR IMAGE AREA
T(x3,y3)-T(x4,y4)
54
STORE INTO XML BOX AFTER CONVERSING INTO XML DATA
XML BOX
55

Fig.12

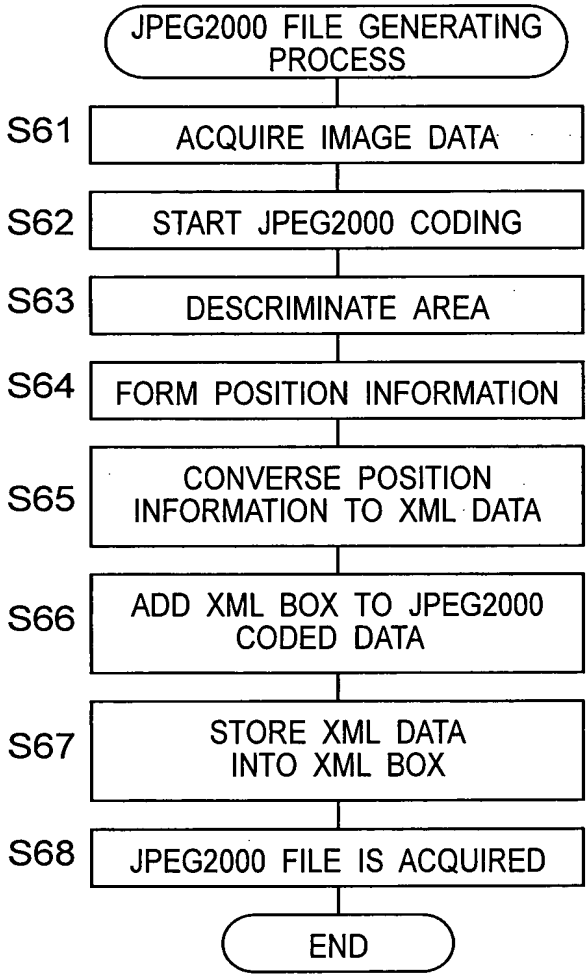
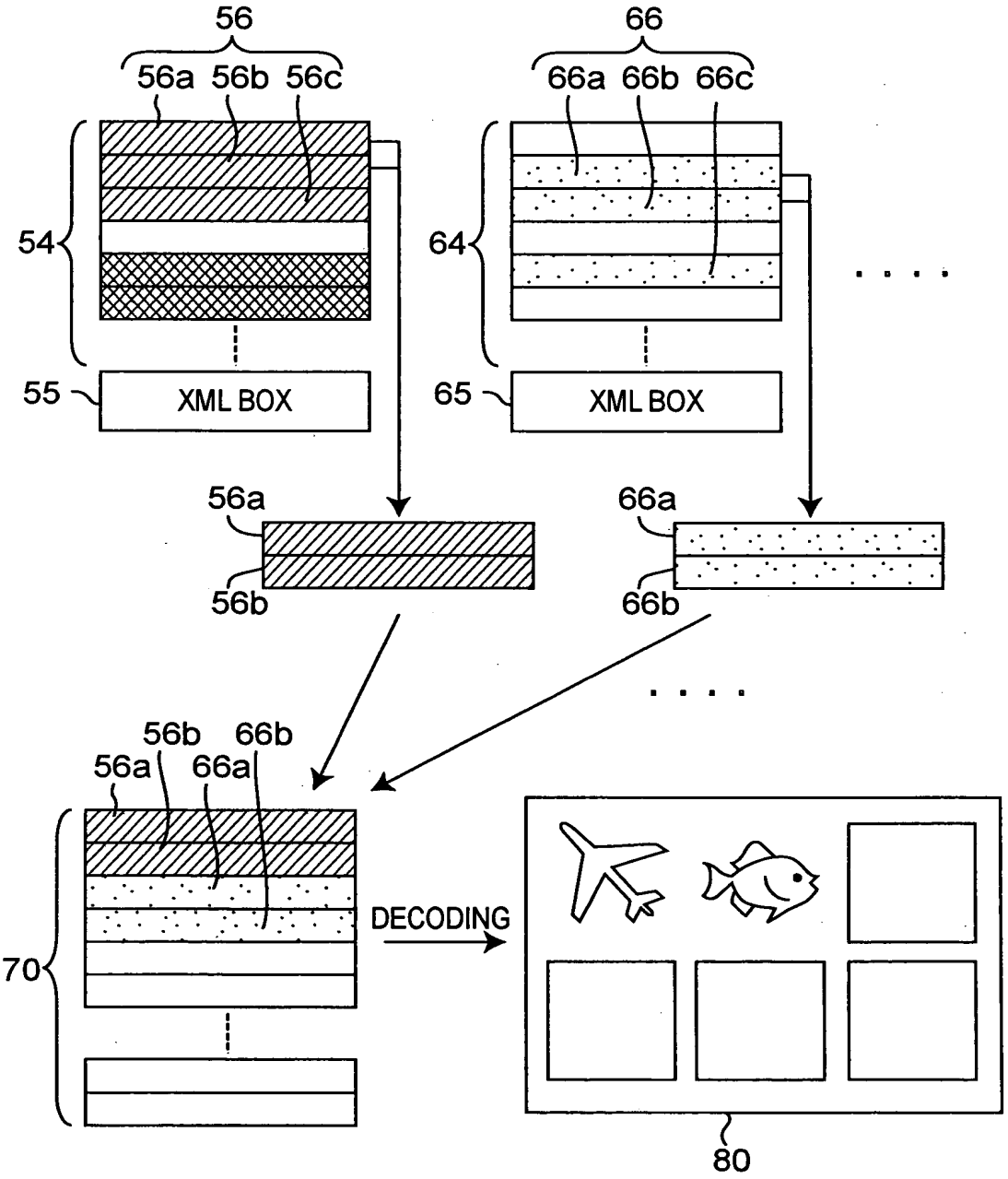

JPEG2000 FILE GENERATING PROCESS
S61
ACQUIRE IMAGE DATA
S62
START JPEG2000 CODING
S63
DESCRIMINATE AREA
S64
FORM POSITION INFORMATION
S65
CONVERSE POSITION INFORMATION TO XML DATA
S66
ADD XML BOX TO JPEG2000 CODED DATA
S67
STORE XML DATA INTO XML BOX
S68
JPEG2000 FILE IS ACQUIRED
END

Fig.13


56
56a 56b 56c
54
55
XML BOX
66
66a 66b 66c
64
65
XML BOX
56a
56b
66a
66b
56b 66b
56a 66a
70
DECODING
80

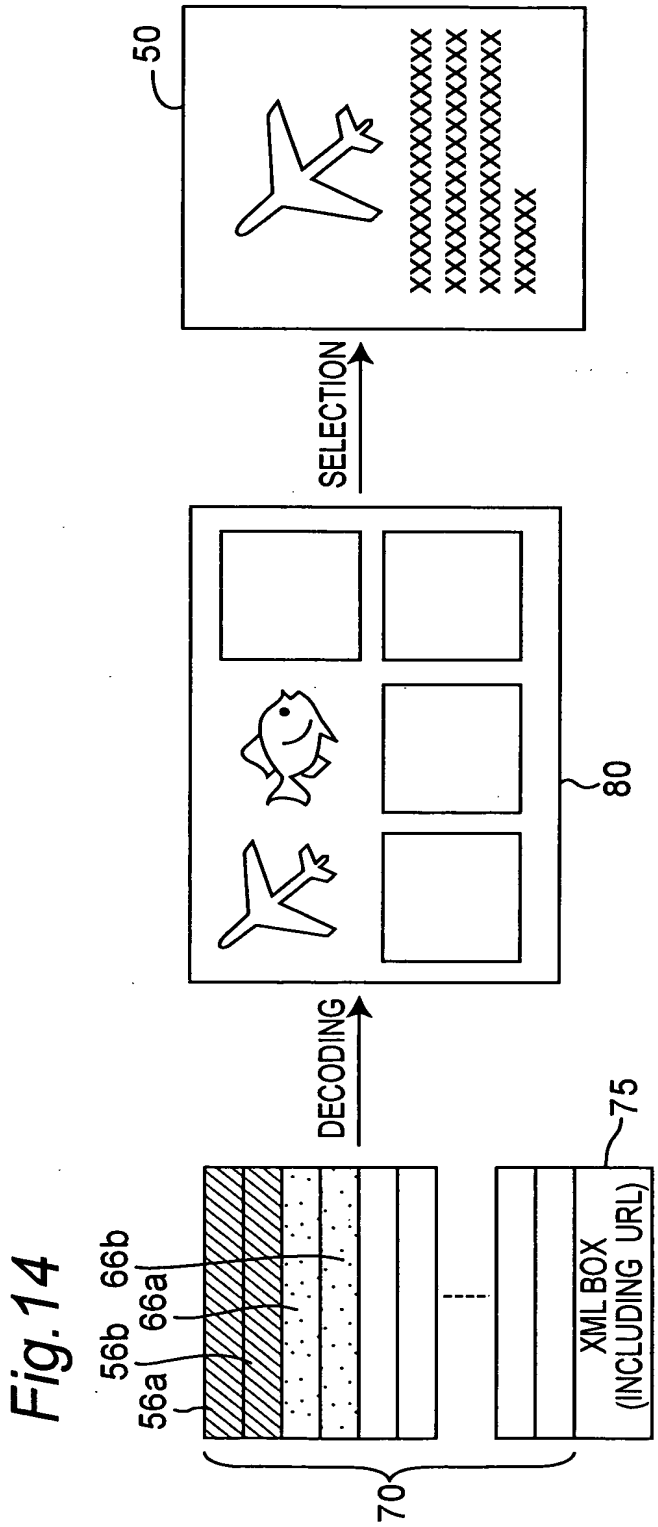

50
XXXXXXXXXXXXX
XXXXXXXXXXXXX
XXXXXXXXXXXXX
XXXXXXXXXXXXX
XXXXX
SELECTION
80
DECODING
75
XML BOX
(INCLUDING URL)
66b
66a
56b
56a
70

Fig. 14